

# Notice of Allowability

Application No.

10/763,260

Examiner

Matthew J. Daniels

Applicant(s)

BRANDT, GUNNAR

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the reply filed 16 August 2006 and the interview held 14 September 2006.
2. ☒ The allowed claim(s) is/are 1,3-18,20-25 and 27-32.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 8/16/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 20060913.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jeffrey Killian on 14 September 2006.

The Claims have been amended as follows:

1. The method for the preparation of a cutting tool insert having a sintered alumina and silicon carbide whisker composite material body, comprising the steps of

[-] milling and mixing powders of alumina and silicon carbide whiskers;

[-] forming said mixture into a preformed workpiece;

[-] heating said workpiece at a heating rate of from about 20 to about 60°C per minute by applying electrical energy in the form of a DC current that at least partially goes through said workpiece to a sintering temperature of between from [about 1600] 1800 to about 2300°C; and

[-] holding said workpiece at said sintering temperature for a holding time of from about 5 to about 60 minutes at a pressure of between 20 to 100 MPa,

wherein the proportion of silicon carbide whiskers in said composite material is from about 5 to about 50 % by volume and said alumina grain size in said composite material has a 80<sup>th</sup> percentile (P80) of less than 2.5 µm.

Claim 2 has been cancelled.

In Claim 3, replaced "claim 2" with --claim 1--

In Claim 4, replaced "claim 2" with --claim 1--

Claim 19 has been cancelled

In Claim 20, replaced "claim 19" with --claim 1--

### ***Claim Rejections - 35 USC § 112***

Claim rejections set forth previously under this section are withdrawn in view of the persuasive arguments drawn to the rejection of Claim 2 under 35 USC 112, second paragraph, on page 7 of the remarks filed 14 September 2006.

### ***Reasons for Allowance***

The following is an examiner's statement of reasons for allowance: The prior art does not teach or fairly suggest the subject matter of amended Claim 1, and in particular the combination of the claimed composition, preformed workpiece, heating with a direct current that goes through the workpiece, heating rate, and sintering temperature. The closest references are Shen (J. Am. Ceram. Soc., Vol. 85, No. 8, 2003, pages 1921-1927), Choa (Key Engineering Materials Vols. 132-136, 1997, pages 2009-2012), and Yang (USPN 6417126).

Shen fails to teach or fairly suggest the subject matter of Claim 1, and in particular fails to teach or fairly suggest milling and mixing powders of alumina and silicon carbide whiskers, forming the mixture into a preformed workpiece, heating from 1800 to about 2300 C, the volume

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percent whiskers, and the claimed 80<sup>th</sup> percentile grain size. In particular, Shen teaches that one of the benefits of spark plasma sintering is that a lower sintering temperature of 1175 C to 1600 C (page 1922, left column) can be used, and there would be no motivation to use the higher claimed temperature range for a mixture that is at least about half alumina.

Choa fails to teach or fairly suggest the subject matter of Claim 1, and in particular fails to teach or fairly suggest milling and mixing powders of alumina and silicon carbide whiskers, forming the mixture into a preformed workpiece, the claimed heating rate of 20 C/min to 60 C/min, and the claimed 80<sup>th</sup> percentile grain size. While Choa states a temperature of 1800 C (Abstract, line 5), Choa provides no examples at 1800 C and teaches that fully dense samples are achieved from 1500 C to 1700 C (Fig. 2, page 2011), and there would be no motivation to use the higher claimed temperature range for a mixture that is at least about half alumina and contains about 5 to about 50% by volume silicon carbide whiskers.

Yang fails to teach or fairly suggest the subject matter of Claim 1, and in particular fails to teach or fairly suggest the applying of a DC current that at least partially goes through the sample. Additionally, Yang teaches away from the instant invention by teaching “without pressing” (16:37).

Additionally, US 2005/0133963 is cited on the PTO-892 and has been considered. However, the foreign priority document for this case is in English, supports the subject matter of Claim 1, and was filed prior to the earliest effective filing date of the 10/742,636 application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 9/18/06

*MJD*

*cf*  
CHRISTINA JOHNSON  
PRIMARY EXAMINER  
9/18/06